

HISTORY OF BRAZILIAN - GERMAN DRILLING COOPERATION

... more than half a century

GMT-German Association for Marine Technology

ALL TYPE OF PLATFORMS IN PETROBRAS FLEET

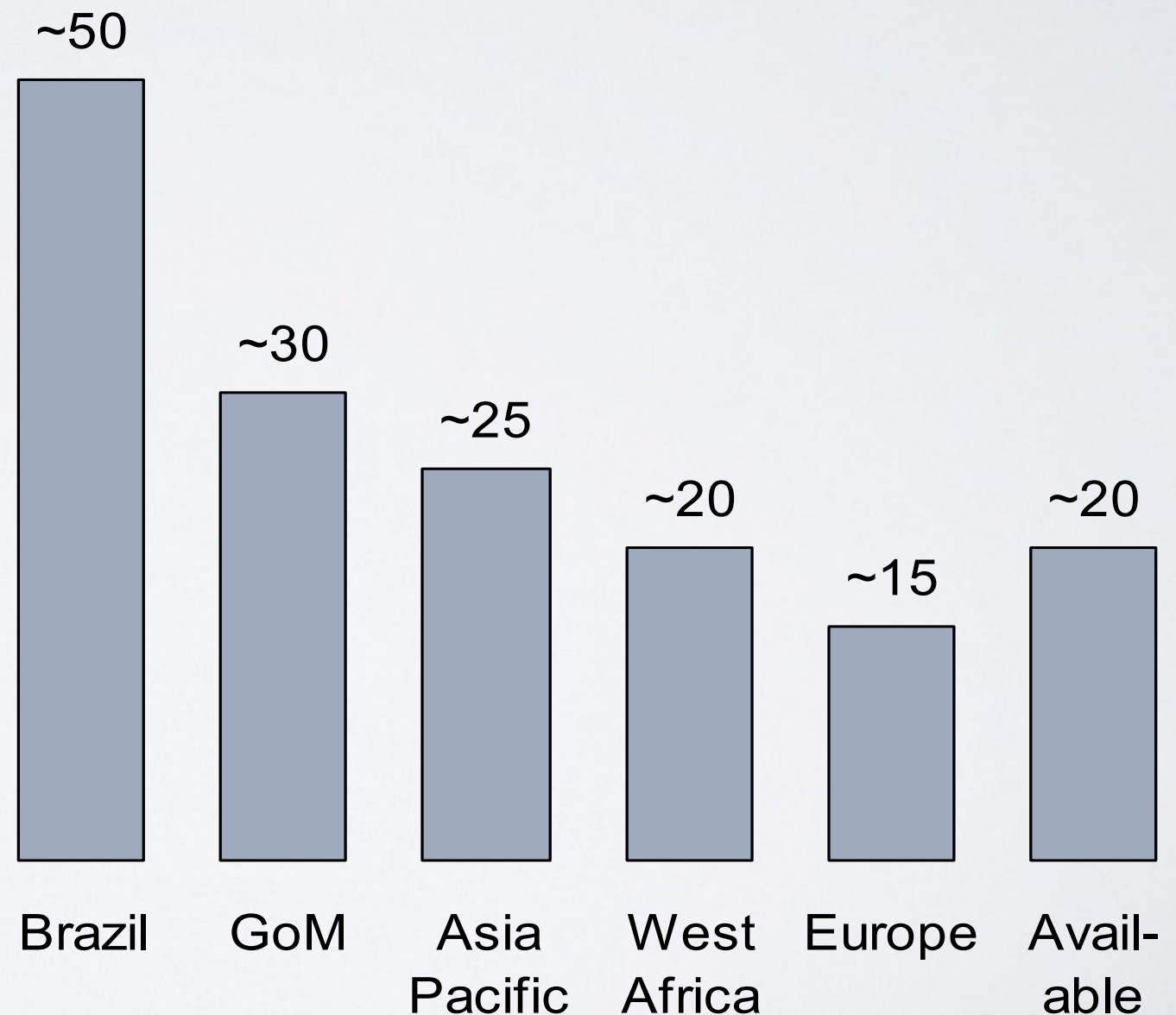


Supported by major german sub supplier
and delivered by AkerSolutions

EXPECTATION IN 2010

100-150 deepwater new-builds expected by 2020, Brazilian orders biggest near term potential

Based on situation in 2010:



REALITY IN 2020 FOR BRAZIL



MH WIRTH - DRILLSHIP

for Brazilian Market

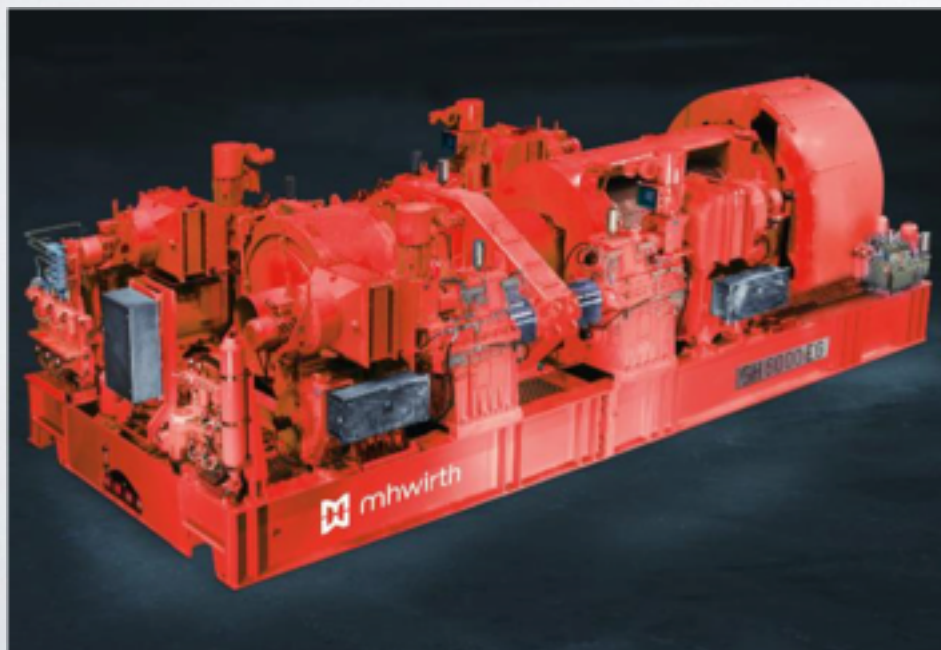


MH WIRTH -DRILLSHIP

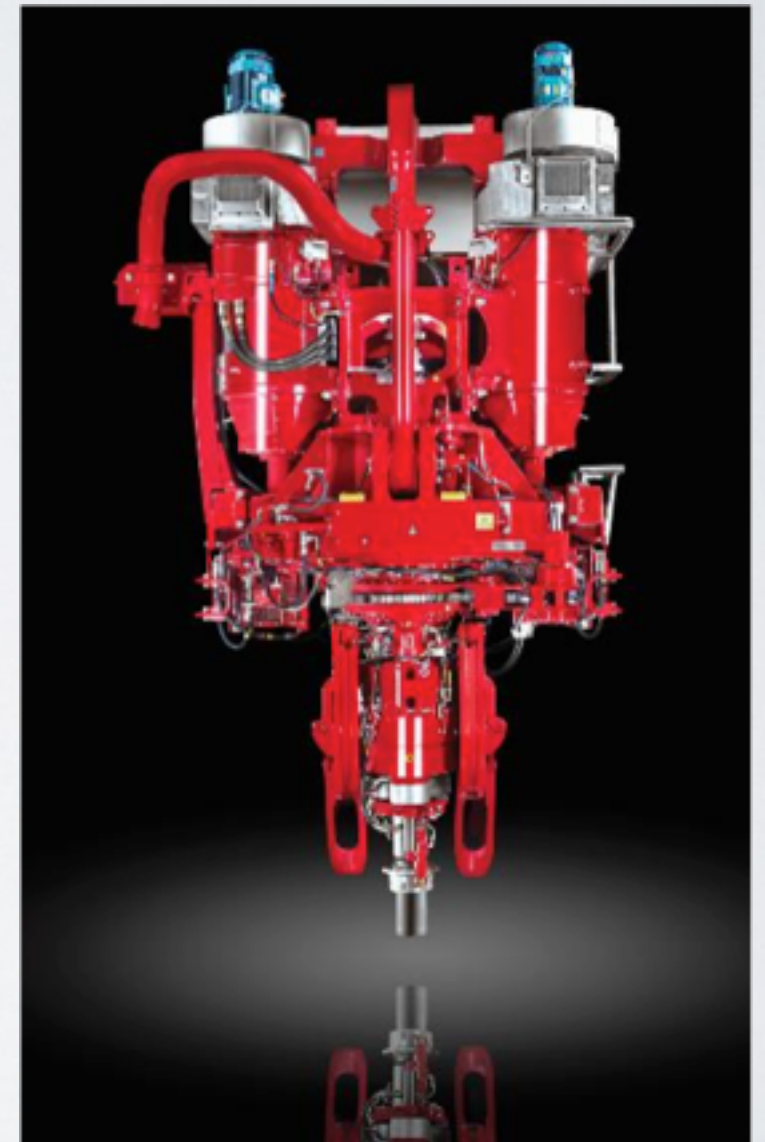
High End Drilling equipment for deep water made in Germany



Mud Pump
2200 hp

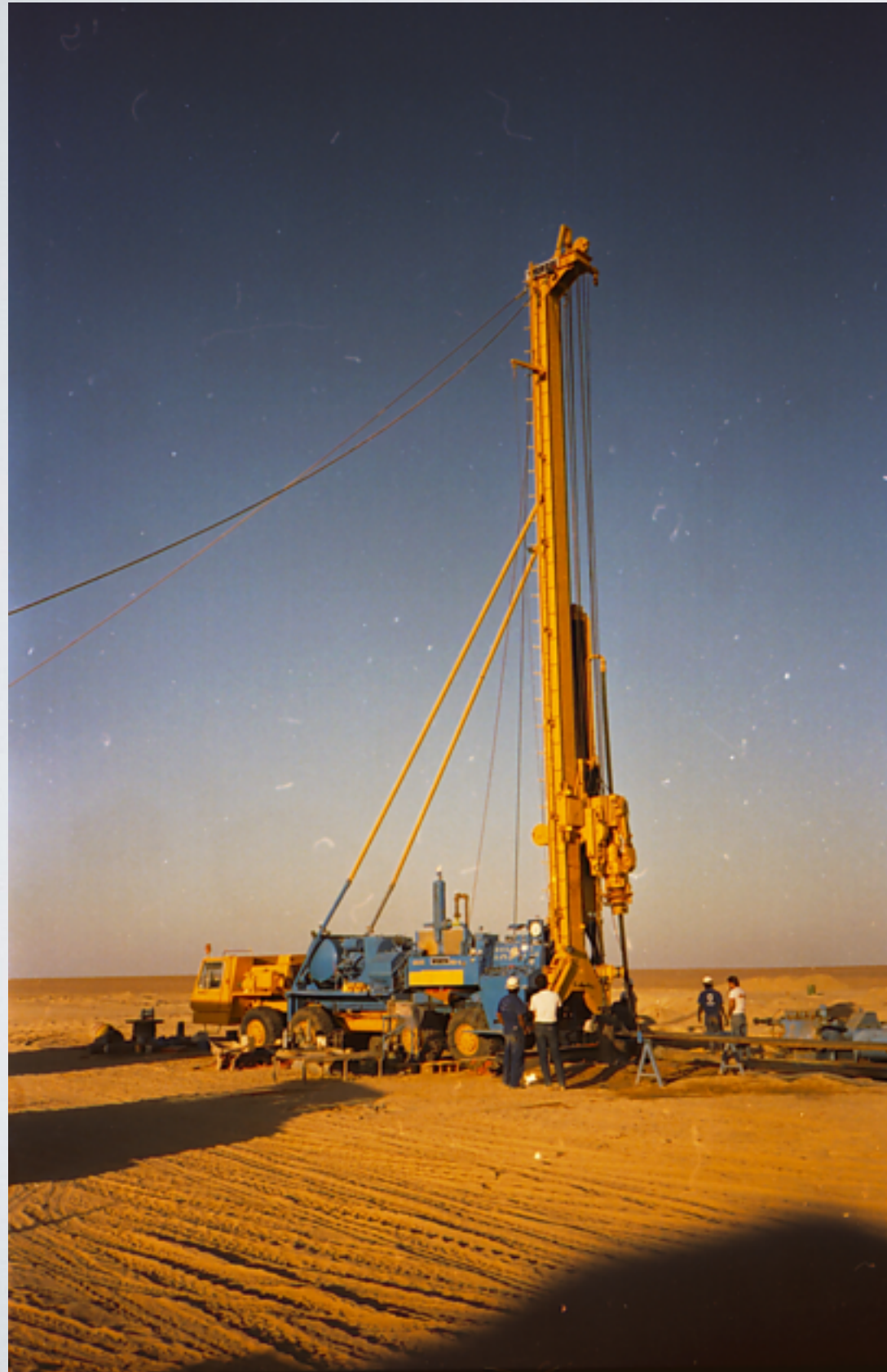


Drawworks
8000 hp



Top Drive
1200 tons

GREAT MAN-MADE RIVER PROJECT



World's largest irrigation project

- First expansion stage carried out by Brasoil with German Drilling Rigs
- 180 fountains drilled up to 650 meter depth
- Water reservoir comparable to 420 meters water column over hole Germany
- Serves Libyan cities daily with 2,5 million m³ for more than 100 years

NITEROI BRIDGE RIO



Foundation of 70 m high piles for unimpeded ship passage executed by Odebrecht



Supported by German Taylor
Made Pile Top Drilling Rigs



ANGA DOS REIS

foundation of nuclear power plant



- Foundation Drilling Odebrecht
- Construction Supervision and Geological Exploration Hochtief
- Taylor made Drilling Rigs supplied from Wirth Germany
- More than 100 piles of 1.75 m up to 60 m depth was drilled